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ABSTRACT

A literature review is presented of client outcome measures in rehabilitation programs for the physically disabled in Canada and the United States. Following an introduction to the changing need for program evaluations and accountability, articles dealing with the traditional outcome measurement system are reviewed that deal with the traditional criterion used to measure program success, i.e., whether clients can obtain gainful employment following participation in a rehabilitation program. The need for new evaluation measurement systems, brought about by changes in the goals and philosophies of rehabilitation, is addressed in a review of new outcome measures that encompass a broad spectrum of issues, including physical functioning, independent living, recreation and leisure, emotional stability, psychosocial development, educational advancement, and vocational potential. Numerous examples of recently developed rehabilitation measurement systems and evaluation research projects are also provided along with comments and critiques of the more promising developments. (Author/NRB)

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Current Methods of Measuring Client Outcome in Rehabilitation Programs for the Physically Disabled

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Introduction

In recent years, as a result of the present climate of economic restraint, many of the social services have been increasingly required to justify their existence. Rehabilitation services for the physically disabled have always been in the fortunate position of being able to account quite impressively for the use of their funds by pointing to the number of handicapped individuals they have placed back in society as productive, tax-paying wage-earners.

The adequacy of this criterion of accountability was not questioned for many years, as the benefits to society and to the individual client of employment seemed obvious. Lately however, this situation has been changing; rehabilitation programs are now not quite so clear as to the criteria they should be using to assess their usefulness and their raison d'etre. While gainful employment is still seen as a major goal of the rehabilitation effort, it is now generally acknowledged that this should not be the only goal, and indeed is not an appropriate goal at all for many of the more severely disabled clients who are now being treated.

If vocational outcome and employment status are no longer acceptable as the sole measures of rehabilitation success however, what other measures should be used? More importantly, the underlying question now has to be asked of what constitutes a rehabilitation "success" in today's world? How should this concept be defined, and then how should it be assessed? And from whose point of view: the client's? the counselor's? the government's?

This review paper will address these questions through an examination of the current state-of-the-art in rehabilitation outcome measures. Certain parameters for the review have been set out in order to provide a basic focus for the material; these are listed below.

First, only rehabilitation programs for the physically disabled are considered, and not those for the developmentally or emotionally disabled, although much of what is said applies to this population and this category of rehabilitation programs as well.

Second, only client-specific outcome measures are reviewed, not program-specific measures (of which there are many).

Third, while the topic of outcome indices is logically tied to that of program evaluation, the primary focus of this review is on the former and not the latter. Therefore while issues relating to rehabilitation program evaluation are mentioned throughout the paper, it does not present a review or explanation of the various types of program evaluation approaches and the advantages or disadvantages of each (i.e., input, process, and outcome studies; cost-benefit vs. cost-effectiveness vs. cost-efficiency analyses; etc.).

Lastly, the source material used is limited to American and Canadian references. It was the intention to further limit the scope of the review exclusively to Canadian material; however this proved to be impractical due to a lack of available or accessible information on rehabilitation client outcome measures in this country. It is hoped that in future literature reviews of this type, more references derived from Canadian sources will be available for inclusion.

The Traditional Outcome Measurement System

The measurement of client outcome provides a way of determining the effect of a rehabilitation program on the disabled individual. It assesses how the client has changed as a result of his or her involvement in the rehabilitation process. This information is then used as the basis for deciding whether or not the program has been successful, since rehabilitation program goals typically include statements about intended client outcomes.

The traditional determinant of successful outcome has consistently been the client's attainment of gainful employment. The term "rehabilitation" has been virtually synonymous with vocational rehabilitation, as witnessed by the Federal-State system of Vocational Rehabilitation agencies in the United States and the Vocational Rehabilitation Services in Canada. Statements such as that made by Ranta in 1963 (in Hefferin & Katz, 1971, p. 8) were typical of the thinking of the day:

> Job placement is the last but important--perhaps the most important--link in the process called vocational rehabilitation. It is said that rehabilitation cannot be considered successful until the rehabilitee is placed in remunerative and satisfying employment. This is recognized as the ultimate goal of rehabilitation.

The belief was that only through vocational adjustment would the individual then be able to make a satisfactory adjustment in the rest of his or her life. Work was thus seen as the prerequisite for psychosocial rehabilitation and not the reverse. Menninger (1964, p. xiii) voiced the underlying philosophy when he stated that "In American life, work is an essential activity of the mentally healthy person." And Super (1957, p. 301), one of the earliest vocational rehabilitation and career development specialists, maintained that "assisting a client to use his assets in order to make a better vocational adjustment will result in his being able to make a better

adjustment in other areas of living."

While many rehabilitation professionals still regard the obtaining of a job as the single most important criterion of a successful client outcome, the focus has been shifting over the past decade to include a consideration of other criteria as well. Numerous suggestions have been made as to what some of the other criteria should be. These will be discussed at length later in this paper. For the present however, four general issues in the assessment of outcomes, as enumerated by Bolton (1974, 1979) will be considered:

1. Economic vs. noneconomic measures
2. Unidimensional vs. multidimensional measures
3. Relative vs. absolute measures
4. Self-report vs. observer rating measures

Economic measures represent the customary outcome criteria, and include details regarding the client's job placement such as salary, taxes paid, etc. Noneconomic measures refer to aspects of the rehabilitation process for which it is difficult to state a monetary value. This includes such concepts as work satisfaction, quality of life, and mental well-being of the client. Because most rehabilitation legislation still defines both the disability and the potential for rehabilitation in vocational terms, economic outcome measures are those most frequently required to be reported.

Unidimensional vs. multidimensional measures addresses the issue of whether successful rehabilitation can be conceptualized along a single continuum with a sole criterion, such as the attainment of gainful employment. The trend today, as indicated, is towards the study of multiple outcomes or a multidimensional model of rehabilitation results. This trend supports the notion that success in rehabilitation actually consists of a number of relatively independent components that should be quantified as a profile

of separate measures.

Although absolute measures of rehabilitation (i.e., employed vs. not employed) have been the norm, it is now widely recognized that a "case difficulty factor" needs to be built in to the success measures. Clients who are quite severely disabled or multiply handicapped will obviously be more difficult to rehabilitate, regardless of the criteria used, than will the less severely disabled. Thus success measures should, but generally do not yet, take account of the client's initial status.

The data collection instruments used will also have a definite effect on the type of information collected, and on the definition of success. Both self-report and observer rating measures have been utilized to assess client outcomes, and each has its advantages and disadvantages, as has been documented in the psychology literature. The various information sources used have included demographic data forms, closure information sheets, questionnaire responses, follow-up employment data, self-report inventories, and counselor ratings.

There have been some indications that criteria may in fact be source-specific; i.e., that the nature of the "success" criteria chosen may depend on the type of information gathered, and not vice versa, as should be the case. This issue also relates to the question of whether the counselor's opinion is considered to be the most important indicator of outcome, or if the client's own views regarding improvement in the rehabilitation process are to be given weight (and if so, how much). If success, like beauty, is in the eyes of the beholder, the question then becomes, through whose eyes should outcome results be measured? As one rehabilitation counselor has pointed out,

> The "26" closure as a measurement of success lies with the agency and not necessarily the client. The consumer may have his own definitions of successful outcome in

> relation to services received. These definitions may or may not include successful adjustment in an appropriate vocation. The visually impaired, for instance, may feel successful if he has learned braille or how to use a cane. (Backer, 1977, p. 12)

From the four above sets of criteria, sixteen combinations of outcome measurements are possible, according to Bolton's scheme. He gives as two examples the measurement of salary, which represents an economic-absolute-unidimensional-objective assessment, and measurements of psychological adjustment, most of which represent noneconomic-relative-multidimensional-self-report assessments of client outcome. Bolton notes that the majority of rehabilitation research projects to date have specified a number of criteria assumed to be relevant and then conducted separate analyses for each one. Thus they have used a statistically weaker multiple criteria analysis rather than a multidimensional approach in the assessment of client outcome.

Bolton provides short descriptions of a number of uni- and multidimensional measures of rehabilitation outcome which are already in use. The advantage of the latter method over the former is that multidimensional assessments provide a profile of scores representing several relatively independent aspects of rehabilitation, such as vocational functioning and psychological adjustment. The unidimensional approach, on the other hand, because it provides only a single outcome score, runs the risk of averaging these independent criteria in the one combined measure, which is often then quite difficult to interpret. As Bolton (1974, p. 111) queries, "Can vocational success and personal-social adjustment be meaningfully added together and labelled gain? Is it possible for clients to succeed vocationally and adjust poorly in other areas, and vice versa? If so, what does their gain score represent?"

In Canada, formal national requirements for the reporting of results from the government rehabilitation programs have never been established.

In the U.S., however, a relatively elaborate and sophisticated system of reporting rehabilitation results has developed over the years. Unfortunately, the system of outcome statuses, which was first devised in the 1920's, is now seriously outdated. But at the time of its creation, it provided virtually the only concrete, measurable criterion of success within any of the government social service programs.

Fifty or sixty years ago, the only type of rehabilitation which was acknowledged to exist was vocational rehabilitation, as stated previously. The clearcut goal of rehabilitation, therefore, was to make the client employable and get him or her into a job. State Vocational Rehabilitation (VR) agencies throughout the U.S. carried the major responsibility for performing this function, although there were some private rehabilitation facilities as well. Only a certain group of clients were served, however: those who had clearly specified physical handicaps, and who also were considered to have the potential for getting a job if they were helped by the provision of appropriate training and/or prosthetic devices.

The State VR agencies received their funding from the Federal government, and were responsible for reporting back on how the taxpayers' money was being spent. Thus the current outcome measurement system, or "case closure" system, which is still in use today, began with the need to justify how Federal funds were being spent to rehabilitate clients and return them to gainful employment so they would no longer be dependents of the State.

At present there exists a myriad of local, State, and Federal reporting requirements for American rehabilitation facilities which have been mandated by the government. This is one reason why the United States is so far ahead of Canada in its consideration of rehabilitation outcome measures; it has been forced to deal with the issue of program evaluation from very early on,

due to the Federal government's policy regarding accountability where taxpayers' funds are being spent.

The Rehabilitation Services Administration (RSA) is a branch of the U.S. Department of Health, Education, and Welfare, and the overseeing body of the State VR agencies. The purpose of the RSA has been stated in their Long-Range Plan of 1973 as follows: "In conjunction with other public and voluntary agencies, to stimulate, develop, and implement programs which provide services for the disabled in maximizing their potential for a full and, to the extent possible, a productive life." (Walls, Ellis, Zane, & Moriarty, 1978, p. 28). However the definition of a "full and productive life", and the means for measuring these goals, are not at all clear and are obviously subject to varying interpretations.

In 1971 the RSA issued a Vocational Rehabilitation Manual, which set out the Federal standards and procedures for determining case statuses at closure. A Form RSA-300 is used by the agencies to record the course of events for each client from initial contact with the agency to final closure of the case. This form is used for assessing the effectiveness of the rehabilitation program, for describing client characteristics, and for accounting to the government for budgetary expenditures.

Although there are various categories and types of closure statuses, the one on which all attention has traditionally been focused is the Status 26 "closed--rehabilitated" category, the fundamental measure of vocational rehabilitation outcome. A Status 26 closure indicates that 60 days after completion of the rehabilitation program the client is involved in gainful employment, at which point the case is closed. Thus there is an overriding emphasis on work as the only "respectable" outcome of the rehabilitation effort. While this emphasis may have been appropriate at a time when em-

ployment was the only goal of rehabilitation facilities, the philosophy, goals, and services of rehabilitation have now changed. There is now increasing attention paid to the psychosocial components of rehabilitation and a heightened awareness of the importance to the disabled of life satisfaction and an acceptable quality of working life.

At the First Institute on Rehabilitation Issues in 1974, a study group on measurement of outcomes identified four basic areas which they felt should be included in assessing client change resulting from participation in a rehabilitation program (Bassett, 1974):

1. Vocational functioning and potential
2. Economic independence
3. Physical functioning
4. Psychosocial functioning

If each of these four areas is considered to be important in the assessment of client outcome, it is quite obvious that a multidimensional measurement system is needed. In addition, the Status 26 emphasis must be eliminated, since this addresses only the first of the four areas of change, and also since employment goals may be unrealistic for the most severely disabled individuals.

A further difficulty with the Status 26 system is that it attempts to represent rehabilitation as a single dichotomous variable: Either the client is rehabilitated (i.e., has a job) or he/she isn't. This is an inadequate definition of the term, in light of today's usage of the word "rehabilitation", and thus a poor method of measuring a concept which is no longer considered to be so absolute.

It has been noted by numerous writers (Backer, 1977; Bolton, 1974, 1979; Conley, 1973; Weisinger, 1975) that the current U.S. outcome measure-

ment system totally ignores the varying degrees of difficulty of different cases. As Backer (1977, p. 1) points out, "How much effort it took to make the placement and how successful the rehabilitation--kind of job attained, how long it will last, client's degree of satisfaction with the job and with the rest of his or her life, etc.--are simply not reflected in this system of measurement." It gives no recognition to the fact that some clients are harder to assess, harder to train, harder to place in jobs, and thus harder to "rehabilitate" than others. There is no incentive, therefore, for rehabilitation counselors to take on the difficult clients, or those who have no intention or no ability to ever work.

Under the present system, clients who have made a meaningful improvement in their lives through their participation in a rehabilitation program, or in their future potential for obtaining a vocational placement, but who are not gainfully employed 60 days after the completion of the program, are still classified as "closed--not rehabilitated". No credit or recognition is given to the counselor for all the time and effort which has undoubtedly gone into the case. Counselors can easily come to feel that it is quantity of "26's", not quality of rehabilitation, which they should strive for, since this is what makes them "look good".

This situation leads to numerous circumstances where the criterion can end up becoming a goal in itself. Vialle (1968) and Conley (1973) have described several of the events which can occur:

1. A tendency to emphasize handling simple rehabilitation cases requiring little of the counselor's time in order to increase number of cases closed.

2. A tendency to encourage closing clients' cases before the individuals are actually ready to enter the job market, in order to achieve

another Status 26 closure

3. In certain other situations, a tendency to encourage keeping clients involved in the rehabilitation process, delaying closure in order to meet next year's quota

4. A tendency to select the easily attainable goals rather than those which would be in the best interest of the clients

5. A tendency to de-emphasize nonemployment-related factors, such as life satisfaction and ability to maintain the activities of daily living without difficulty, despite the fact that these variables are now known to be important to ultimate vocational rehabilitation

6. A tendency for counselors to be disinclined to share information with their colleagues about possible training facilities or job openings for clients since a colleague may use this information to make closures that his "helpful friend" might otherwise have made

7. A tendency, under pressure to provide an increasing number of case closures, for counselors to suggest inappropriate jobs for clients, which may leave the client worse off than before.

The problem of defining client outcome is a crucial one within the field of rehabilitation, since to a certain extent the definition of a "successful" result provides the parameters for the reality of the rehabilitation process itself. Thus the methods by which outcome measurements are made have a large impact on counselors, clients, and the entire rehabilitation system and philosophy. The data which are collected provide the foundation for the general vocational rehabilitation management information system which determines questions of funding and other issues between the government and the local agencies.

Within each agency, outcome data are regularly used in the assessment

of counselor performance, so that whatever is defined as "success" will shape how the counselors carry out their work and what results they strive for. In addition to performance appraisal by supervisors, counselors use outcome information for improvement of the services they provide to their clients and for their own professional development.

The psychological and behavioural influence on clients of the outcome criteria also cannot be overlooked. If clients see that gainful employment is the only type of rehabilitation result that "counts", they may be coerced into going to work when this is not really what they want or are able to do, and may be made to feel that they are not mentally normal or healthy for not obtaining a job. Thus the effect of the outcome measures selected is felt right through the rehabilitation structure.

Another purpose of outcome information is to provide feedback to all staff regarding the services they offer. However, when the type of feedback provided to rehabilitation practitioners is so narrow in scope that it only covers vocational aspects, it is of only limited use. Individual counselors, for instance, cannot be expected to make significant improvements in their service provision and other professional activities if the only concrete information they have to go on from their outcome measurement system is whether or not the client has maintained a job for a given length of time.

For administrators, who are more involved with setting policies, the data provided by the case closure system are also too limited for their use. Because they deal only with employment status following program participation, the data do not give enough details to provide a basis for implementing changes, continuing services, or justifying further funding. These types of decisions can be made with regard to the vocational goals

of a program perhaps, but not for any of the other components which encompass a comprehensive rehabilitation service.

Administrators and policymakers have also become increasingly interested in outcome assessment methods for their use in program evaluation. The U.S. Rehabilitation Act of 1973 mandated the periodic and routine evaluation of government rehabilitation services, resulting in the need among administrators for the regular collection of pertinent information about the type and quality of programs provided. This ever-increasing concern for accountability through evaluation of the effectiveness of rehabilitation services led to the further requirement that individualized rehabilitation plans be written for each client, specifying outcome goals and the anticipated means for achieving them.

In 1974, at the direction of the U.S. Congress, the Secretary of the Department of Health, Education, and Welfare published a Federal document detailing the type of information required of the VR agencies in their program evaluations. The nine RSA program evaluation standards, which have been revised many times since they were first published, have been reproduced in Table 1. A corresponding set of standards has been developed for private rehabilitation facilities, and these nine items are listed in Table 2. From the two lists it is quite easy to see the level of sophistication of the U.S. evaluation requirements, and the degree of accountability which has been mandated.

As Backer (1977) points out, the common theme in the two sets of standards is their encouraging of: 1) the development of methods for specifying outcome criteria; and 2) means for gaining knowledge through the evaluation process that can be used both for assessing program effectiveness and for designing program improvements. While the formulation of an outcome

Table 1

The Nine Federal Reporting Standards

Mandated for the Evaluation of State VR Services

1. To insure that the rehabilitation program is serving the eligible disabled population and to insure that these services are provided in an equitable manner

2. To insure that rehabilitated clients are placed in gainful employment suitable to their capabilities

3. To insure that undue delays are avoided in providing clients with VR services

4. To insure that available resources are utilized to achieve maximum operational efficiency

5. To insure that manageable-sized caseloads are maintained

6. To insure that clients closed--rehabilitated retain the benefits obtained from the rehabilitation process

7. To insure that the need for postemployment (post-closure) services is satisfied

8. To insure that agencies are consistently identifying reasons why clients are not successfully rehabilitated

9. To insure that the client is satisfied with the vocational rehabilitation services as developed with the counselor

Source: Backer, 1977, pp. 18-19.

(Standards initially published in the Federal Register in 1974)

Table 2

The Nine Federal Reporting Standards

Mandated for the Evaluation of Private Rehabilitation Facilities

1. The evaluation system shall provide for a statement of purposes, program goals, and objectives

2. There shall be a relationship between the statement of purposes, program goals and objectives, who is served, and services provided

3. Statements of goals and objectives must be achievable, measurable, and the attainment of all objectives should enable the program goals to be achieved

4. The facility's evaluation system shall provide for measures of effectiveness

5. The facility's evaluation system shall provide for measure of the efficiency of the facility

6. There shall be a system to describe and monitor who is being served by the facility

7. The evaluation system result shall be communicated to appropriate parties to be utilized in facility decisionmaking

8. Appropriate information on results shall be made available in an understandable fashion to the governing body and staff of the facility and to the public, including purchasers, contributors, and consumers

9. The facility shall have a mechanism to provide for continuous review of the adequacy of its evaluation system

Source: Backer, 1977, p. 20.

(Standards initially published in the Standards Manual for Rehabilitation Facilities in 1974)

measurement system and the evaluation of program effectiveness are not synonymous, the two tasks are certainly related, since program effectiveness is ascertained at least in part through a determination of client outcome as related to program goals.

One pair of researchers (Bennett & Weisinger, 1974) has defined program effectiveness as "a statement of fact about how well the objectives of the program were met." This deceptively simple definition hinges on the phrase "a statement of fact", which sets up the requirement for an objective measure of the program goals. However, program goals are often not stated in quantifiable terms, and in some cases, are not even overtly stated at all. It is of course impossible to operationalize goals which are vague, diffuse, or unstated. One of the fundamental purposes of the set of standards for private facilities listed in Table 2, and of the individualized rehabilitation plans specifying outcome goals for clients in State VR agencies, is to eliminate this problem of unspecified goals.

While it is true that the new government mandate, through its insistence on clearly defined goals and objectives, aids programs in undertaking evaluations, the set of nine RSA Standards is nevertheless still clearly oriented primarily towards vocational goals. The Federal definition of a "successful" client outcome is still stated in terms of insuring "that rehabilitated clients are placed in gainful employment suitable to their capabilities" (Federal Standard #2, Table 1). It should be noted that the Standards for private facilities allow for much more flexibility in the definition of client outcome, since no definition is actually specified within this list of Standards.

To operationalize and provide further clarification for the term "suitably employed", the Texas Rehabilitation Commission published a set of cri-

teria for closing cases employed, as part of their 1976 Rehabilitation Services Manual. Their definitions have been included, for informational purposes, in Table 3. In addition, Tables 4 and 5 list the data elements which have been mandated for Federal Standards #2 and #6, the two measures of vocational and economic factors.

It can be seen that an attempt has been made to progressively refine the operational definitions of the terms which are being used in the evaluation efforts. It should also be noted that while the basic emphasis continues to be on gainful employment, there has been some movement towards recognizing other types of activities as well in the "closed--rehabilitated" status. Specifically, Status 26 now includes all of the following substatuses:

1. closed in competitive employment, full-time, economically independent
2. closed in competitive employment, less than full-time
3. sheltered employment
4. homebound employment
5. unpaid family worker
6. homemaker

While this certainly represents a step in the right direction, it unfortunately presents a new problem. It is quite obvious that the above subcategories are far from equivalent, and yet they are now all lumped together as "Status 26's" in the Federal reporting scheme. Just as there is a wide variability in the cases which end up being closed as "not rehabilitated", there is now almost an equally wide variability in those classified as "closed--rehabilitated". For instance, there is a very significant difference between the "successful" rehabilitation of an individual who is able to hold down a 40-hour per week competitive job and the "successful" rehab-

Table 3

The Texas Rehabilitation Commission Criteria

for Closing Cases "Suitably Employed"

Employment is considered suitable when, after a reasonable period of follow-up (60 days minimum), it has been established that the following minimum conditions have been met:

1. The work performed is consistent with the client's physical and mental capabilities, interests and personal characteristics

2. The client possesses or has acquired necessary skills to perform the work successfully

3. The employment and working conditions will neither aggravate the client's disability nor jeopardize the health or safety of others

4. The wage and the working conditions conform to State and Federal statutory requirements

5. The client and employer are satisfied

6. The employment is regular and reasonably permanent and the client receives a wage commensurate with that paid other workers for like productivity on similar jobs. If not fulltime, the employment is consistent with the client's capacity to work and produce (such limitation of capacity having been recognized insofar as possible when the rehabilitation plan was formulated)

7. The employment of the client during the 60-day period may be with more than one employer providing the vocational objective remains consistent

Criteria concerning suitability of employment are sufficiently flexible to provide for closure in employment in those special situations such as homemaker, unpaid family worker, farmer, sheltered workshop employee, etc. For purposes of closure, the following definitions apply:

1. Homemaker: This category refers to persons (male or female) whose principal activity is keeping house for their families

2. Unpaid family worker: This category refers to persons who work without pay on a family farm or in a family business operated by a member of the family to whom they are related by blood, marriage, or by court decree

Source: Texas Rehabilitation Commission, 1976, p. 3.

Table 4

The Data Elements Required

for Federal Reporting Standard #2

Standard #2: To insure that rehabilitation clients are placed in gainful activities suitable to their capabilities

The data elements that must be collected in order to judge this Standard are:

1. Percent of those placed in competitive employment (wage and salary earners and self-employed)
2. Percent of those placed in non-competitive employment (sheltered workshops and others)
3. Percent of those placed as homemakers
4. Percent of those placed as unpaid family workers
5. Percent of those placed in business enterprise programs
6. Percent of those who received training relevant to the job family in which they were placed (as identified by the first digit of the D.O.T. Code) to the total number receiving training
7. Mean weekly earnings at rehabilitation of those placed in wage-earning employment (Status 26) as compared with mean weekly earnings the week before referral

Source: Weisinger, 1975, p. 52.

Table 5

The Data Elements Required

for Federal Reporting Standard #6

Standard #6: To insure that clients rehabilitated retain the benefits obtained from the rehabilitation process

The data elements that must be collected in order to judge this Standard are:

1. Percent of rehabilitated clients still employed at time of follow-up, specifying 1 year, 2 years, or 3 years after closure

2. Percent with earnings at closure, mean earnings for all with earnings at closure and mean earnings for all with or without earnings at closure

3. Percent with earnings at follow-up, mean earnings for all clients with earnings at follow-up, and mean earnings for all with or without earnings at follow-up

4. Percent increase or decrease of earnings at closure to earnings at follow-up

5. Percent of rehabilitated clients (Status 26) unemployed at time of follow-up for
   a) less than one month
   b) 1-3 months
   c) 4-6 months
   d) 7-12 months
   e) more than 12 months

Source: Weisinger, 1975, pp. 52-53.

ilitation of an individual who returns home to the farm following the rehabilitation program to help the family feed the chickens once a day.

In terms of program evaluation activities, the data gathered from reports written to satisfy the Federal Standards are still difficult to use appropriately. Not only do these data represent program-oriented rather than client-oriented measures, but the percentages, number of Status 26's, and other information of this type is useful only when there is some base against which to compare it. However it is difficult to establish a base when it is not known that the programs from which the data are drawn are, or even should be, comparable.

There is no question that the Federal Standards have numerous problems associated with them, many of which have already been identified. There is also little doubt that the present American rehabilitation outcome assessment scheme is seriously deficient and needs to be revamped. With regard to the well-known inadequacies in the system, however, one point has been made by Backer (1977, p. 4) which needs to be borne in mind: "The system of outcome measurement currently employed in American rehabilitation service delivery settings is being used for purposes for which it was never intended, and therefore it is not working well."

One of the earliest and most often repeated criticisms of the Status 26 closure was that it did not allow for the measurement of gains in non-vocational areas. However the counter-argument was that the Federal Vocational Rehabilitation Law did not recognize gains other than the vocational ones, so Status 26 was an appropriate outcome measure. Of course, this argument no longer holds true today, since as has been stated, legislators and rehabilitation professionals alike are now coming to consider other goals in addition to employment as being appropriate outcomes of rehabilitation.

If in fact other goals besides just employment are now being recognized as valid end results of the rehabilitation process, it is important to know what these other goals are. A variety of alternative measures of outcome are now starting to be used in an attempt to update the government case closure system. The remainder of this paper will examine some of these new measures which are being devised to supplement the type of outcome information required by the mandated U.S. Federal Standards. Many of these measures are intended to reduce the current emphasis on "headcounting", on numeric quotas, and on purely vocational goals. While they all have various shortcomings and limitations, they at least provide other choices besides the Status 26 in the assessment of client outcomes following rehabilitation.

New Outcome Measures

In the past decade, there has been a good deal of research activity in the U.S. attempting to revise and/or replace the outdated Federal outcome measurement system. A large amount of the initiative in this area has come from the government itself, which has established Regional Rehabilitation Research Institutes and Research Utilization Laboratories scattered throughout the United States. Private facilities have also contributed in the search for new systems. There is now an accumulating literature on the subject, particularly since the initiation in 1973 of the program evaluation requirements for Federal VR services.

Canada to date has not generated anywhere near the amount of research on outcome measurement in rehabilitation. One reason for this is quite simply that the government has not mandated program evaluation in this country. Canadian rehabilitation programs have therefore not experienced the pressure for accountability as strongly as the Americans have. However, pressure is starting to be exerted here as well, due to the present national economic climate and the competition among the many social service programs for the limited dollars which are available.

In times of financial belt-tightening, programs are commonly asked to account for themselves, particularly when issues of further or increased funding arise. In order to justify their existence, these programs engage in various forms of effectiveness or efficiency assessment, cost-benefit analysis, cost-effectiveness analysis, etc. Although there are many approaches to program evaluation, they all have at their core one vital question: Does the service help anyone? From this question follow many others, but none of them can be dealt with until the issue of what constitutes

"help" (i.e., the definition of a successful outcome) is dealt with.

Only a few Canadian facilities have attempted to tackle this issue through formal program evaluation procedures. Since regular accountability reporting is not officially required, and since the Canadian government has not set up Regional Rehabilitation Research Institutes or Research Utilization Laboratories in this country, it is not in fact even known how much activity is under way in the field of rehabilitation research at present. At least one Canadian program evaluator (Ricks, 1980) believes that evaluation research is being conducted at various health facilities throughout the country, but that the individuals involved in the work are not publicizing their activities. Even if they were, however, it would be extremely difficult to gain access to the material, since there is no organized rehabilitation information retrieval system in existence in Canada. Therefore this section will deal only with American attempts to develop alternate means of measuring client outcome.

Research in new outcome measures for rehabilitation services has proceeded quite rapidly in the U.S. over the past few years. In a book entitled Program Evaluation: A Resource Handbook for Vocational Rehabilitation (Bennett & Weisinger, 1974), a list of 146 outcome measures taken from 75 vocational rehabilitation studies is given. Many of these items are program-specific rather than client-specific, so will not be included here. Eliminating these, Backer (1977) has compiled a list of 20 of the more frequently used client-based outcome measures, which are enumerated in Table 6.

Weisinger (1975) has classified the various alternatives to the Status 26 closure measure as falling into four general categories:

1. Program through-put and closures

Table 6

Twenty Client-Based Rehabilitation Outcome Measures

1. Client's income (annual, monthly, or by household)
2. Hours worked per week
3. Job retention
4. Job benefits
5. Type of job (in relation to the client's training, past experience, and aspirations)
6. Advancement potential of job
7. Attendance and punctuality at work
8. Work quality
9. Upward mobility rating
10. Client's welfare status
11. Amount of average welfare grant
12. Change in client's skills as the result of rehabilitation
13. Employer satisfaction with the client's work performance
14. Employee satisfaction with job received
15. Client's satisfaction with the rehabilitation process itself
16. Psychological characteristics related to successful vocational and life adjustment
17. Improvement in physical functioning
18. Improvement in psychosocial functioning in relation to self, family, and community
19. Ability to maintain self independently
20. Ability to perform the activities of daily living

Source: Backer, 1977, pp. 25-26.

2. Vocational/economic measures

3. Measures of client-related factors

4. Weighted closure measures

Bolton (1974, 1979), it will be recalled, also suggested a four-item classification system of outcome measures:

1. Economic vs. noneconomic measures

2. Unidimensional vs. multidimensional measures

3. Relative vs. absolute measures

4. Self-report vs. observer rating measures

Although his scheme is quite different from that of Weisinger, the same general issues are raised by both writers, as well as by Backer (1977) in his discussion of new outcome measures.

Weisinger's program through-put and closures category consists of ratios of output to input, such as, for example, a comparison of the number of Status 26's to the number of referrals to a program. While avoiding the problem of counting only the absolute number of Status 26's, a point which Bolton raised, this approach is however a program-specific outcome measure of effectiveness, not a client outcome criterion.

Weisinger's measures of vocational and economic factors, while broadening the Status 26 concept, do not broaden it enough, as they still deal with only one part of the total field now considered to encompass comprehensive rehabilitation. What they add, however, is information regarding details of the placement made in a 26 closure (i.e., whether the client is holding down a 40-hour per week competitive job or is working as an unpaid family helper). All but the last six items in Table 6 represent vocational or economic measures.

As both Bolton (1974) and Backer (1977) have noted, there is a wide

degree of variance in the amount of subjectivity involved in the various measures listed in Table 6, ranging from amount of income earned to client satisfaction with the job or employer satisfaction with the client. It is a well-documented fact within the psychology literature that what people say and how they think or act are not necessarily as closely correlated as one would presume them to be. Several of the possible reasons for this within the field of rehabilitation research have been given by Weisinger (1975).

All forms of subjective reporting as a means of data collection suffer from this potential limitation in the accuracy of the information provided. This accounts for one reason why the straight Status 26 measurement system has been so popular for such a long time. It is a much easier task to simply state whether the client is employed or not, without getting into questions of whether he or she is "suitably" employed, much less attempting questions of quality of work or life satisfaction.

In order to provide a true picture of the total effect of a rehabilitation program on an individual however, it is imperative to measure these other elusive, but extremely important aspects of change in the client. If the only reason a client is involved in rehabilitation is to find a job, with no ancillary services provided (in which case the program should be called job placement rather than rehabilitation), a Status 26 or other vocational/economic type of outcome measurement system is appropriate. However, even in programs which are still called vocational rehabilitation, recognition is now widely given to the importance of the non-vocational areas of functioning in the attainment of vocational goals. Westerheide and Lenhart (1974, pp. 27-29) have stated this current underlying principle in the following manner:

> The whole purpose of the rehabilitation process is to effect some kind of change in the individual client that will result in the client's increased economic, social, and personal independence. To adequately assess the effectiveness of vocational rehabilitation, outcome measures must be implemented that reflect change not only in the economic-vocational area of the client's life, but also the physical, psychological, and social area....
> Whether it is called ego strength, interpersonal competence, ability to cope, social competency, maturity or self-sufficiency, an adequate measure of rehabilitation outcome may well be more dependent on the client's ability to make appropriate decisions, act on them, and establish good personal relationships, than on holding a job the required number of days before closure.

The critical ingredient in client-oriented outcome measures is the assessment of client change. This task requires a determination of the following four items: the client's status prior to involvement in the program, an index of client change, the amount of change at closure of the case, and the degree to which the rehabilitation program was responsible for the change (Bassett, 1974). Of course the change is assumed to be positive in nature, but this assumption should always be confirmed for any outcome measure used. Also, care must be taken to ensure, as much as possible, that changes recorded are directly attributable to rehabilitation participation and are not merely the result of spontaneous improvements which would have occurred in any case.

In contrast to this client change approach, it will be remembered that the Status 26 closure system gives no insight into any of the changes which may have occurred as a result of the rehabilitation program, but only asks, Is the individual employed 60 days after closure? As Weisinger (1975, p. 59) states,

> Since the Status 26 closure is essentially a dichotomous variable, it is "yes-no"--"succeed-fail", with no degrees between. Obviously, clients can "succeed" to varying extents short of the Status 26 end point. Significant

benefits can accrue to a client without him ever reaching the desired criterion of employment. It is to this important consideration that change measures are addressed.

Items #15-20 in Table 6 (p. 25) represent client-related outcome variables which are now being more frequently assessed. One of these, #15, is also now mandated in the Federal Reporting Standards of 1974 as item #9 (Table 1, p. 14): To insure that the client is satisfied with the vocational rehabilitation services as developed with the counselor. This represents a significant addition to the traditional outcome measures, and one which recognizes the importance of client opinion in the determination of rehabilitation success for program evaluation purposes. Although it is quite apparent from the nine RSA Standards that the primary focus of the rehabilitation effort is still on vocational training and employment, at least the question is now being asked, "Was the client satisfied with the services?" rather than just "Has the client got a job or not?".

More and more now the client is coming to be recognized as an equal-status participant with the counselor in the rehabilitation process, and his or her views are considered just as important as those of the professionals (Arkansas Rehabilitation Research and Training Center, 1975). As a result of this new emphasis on consumer involvement in rehabilitation, client satisfaction with services has come to be given more credence as a valid index of outcome.

Unfortunately though, not only are there methodological difficulties with measuring this concept, but as Bolton (1979) points out, the importance of client satisfaction as a program goal is still questionable to many rehabilitation professionals. Bolton feels however that it is primarily the measurement problems which will prevent client satisfaction and some of the other nonvocational rehabilitation outcomes from being included in the

newer measurement systems. Notwithstanding this, the Federal government has provided guidance regarding the items which the legislators feel will furnish an adequate indication of client satisfaction with the VR services. These mandated data elements are shown in Table 7.

Table 8 provides an annotated list of some of the new client-related rehabilitation outcome measures. A few of these items were devised in the late 1960's, but most have been developed within the last decade. The list and comments have been compiled from the following sources: Backer, 1977; Bassett, 1974; Bennett and Weisinger, 1974; Weisinger, 1975.

Weisinger's fourth general category of outcome measures which present alternatives to the Status 26 closure system, it will be recalled, consisted of weighted closure measures. This category includes both measures of vocational/economic change and client-related changes, and also encompasses case difficulty indices. The outstanding feature of the approach is that it takes into consideration the fact that some clients are more difficult to work with and to rehabilitate than others.

Backer (1977) has called this approach by far the most promising area for exploration in new methods of outcome measurement. As well, the First Institute on Rehabilitation Issues Study Group on Measurement of Outcomes (Bassett, 1974, p. 32) has stated that "The weighted closure approach is considered by many to be the best available answer to the problem of service criteria, adequacy of counselor performance and of cost-benefit analysis."

Three key concepts are identified by Backer (1977) which form the basis for the weighted closure measures. First, the idea of rehabilitation gain is fundamental, i.e., that rehabilitation "success" can be claimed if the client improves to a specified extent on certain previously determined dimensions, even if he or she does not ultimately end up in a job. In other

Table 7

The Data Elements Required

for Federal Reporting Standard #9

Standard #9: To insure that the client is satisfied with the VR services as developed with the counselor

The data elements that must be collected in order to judge this Standard are:

1. Percent of clients rehabilitated throughout the fiscal year (Status 26) and not rehabilitated (Statuses 28 + 30) who express satisfaction with the following at the time of follow-up, specifying 1 year, 2 years, or 3 years:

   a) Counselor's willingness to listen to client's ideas and suggestions in developing the rehabilitation plan

   b) Adequacy of information provided by counselor to clients for understanding their disability

   c) Promptness of services received

   d) Kind of training received

   e) Benefits of training received

   f) Assistance in seeking job and final employment

   g) Results of medical services

2. Percentage of clients contacted during the follow-up period who stated they would recommend VR service to a disabled friend

Source: Weisinger, 1975, p. 53.

Table 8

Annotated List of New Client-Related

Rehabilitation Outcome Measures

1. Job Satisfaction and Family Functioning. Not widely used in rehabilitation, this measure has been misused in evaluating program effectiveness. Lack of job satisfaction can lead to job termination, but may or may not be related to the quality of VR services provided. The family function variable on this test is difficult to measure. (Schneiderman, 1972).

2. Rehabilitation Service Satisfaction Questionnaire. A device for assessing clients' views of service effectiveness, which was still in the experimental stages in 1973. (Muthard & Miller, 1968; Rubin, 1973).

3. Scale of Rehabilitation Gain. This scale attempts to assess effectiveness of VR services by assimilating diverse personal and economic factors in the areas of physical and emotional health, work adjustment, and life activities. It was a precurser to the Human Service Systems Scale. It is a useful, reliable scale with which to measure gain. (Reagles, Wright, & Butler, 1970).

4. Attitude of Client to Agency. This index of client attitude is difficult to interpret, since a negative attitude may reflect slow or poor service, but may also reflect such characteristics as client militancy. (Miller & Barillas, 1967).

5. Rehabilitation Services Satisfaction Survey. This scale measures one aspect of program quality: the client's opinion of how "good" he thought the VR program was. Since the counselor has the most direct contact with the client, the results tend to measure how well the client liked his/her counselor. (Tenth Institute on Rehabilitation Services, 1972).

6. Measure of Employment Satisfaction. An accepted, established scale measuring client satisfaction with employment. (Weiss, 1967).

7. Measure of Employment Satisfactoriness. An accepted established scale measuring the employer's satisfaction with the client. (Gibson, et al., 1970).

8. Job-Relatedness to Vocational Training. A scale measuring relevancy of training to employment. (Wheeler, 1971).

9. Structured Case Review. This measure establishes certain standards as criteria for "good" counselor performance, and then permits examination of one counselor's case records, or a program's case records, to determine how well these standards have been met. (Muthard & Miller, 1966).

Table 8 (Con't.)

10. Pre- and Post-Treatment Structured Interview. The potency and value of this experimental approach to measuring VR outcomes is entirely dependent on how well the interview is planned and conducted. (Rubin, 1973).

11. Oklahoma RRRI Consumer Measurement Scale. This scale attempts to measure client satisfaction on nine dimensions: speed of service, medical services, training services, employment satisfaction, participation and planning, counselor effort in placement, agency policies, physical facilities, and personal treatment. It does not provide for premeasuring to allow evaluation of client change. Most items are highly subjective, and tend to introduce positive bias. (Cited in Bassett, 1974).

12. West Virginia Followup Kit. This how-to-do-it kit contains instructions for sampling, data collection, table construction, data analysis, and reporting on a variety of rehabilitation variables. A questionnaire for use with employers also is included. The approach provides information regarding status of client after closure on such variables as employment status, satisfaction with VR services and job, interpersonal relations on job, personal work characteristics, characteristics of family, and contribution made by VR agency to present vocational status. The scale does not provide for premeasurement. (Cited in Bassett, 1974).

13. Rhode Island Attitude Survey. This instrument is used to assess client attitude change from initial interview to closure. It contains 96 subjective items reflecting client attitudes towards disability, rehabilitation services, education, employer prejudice, work ethic, and authority. The scale is rather long, but seems to have good face validity. (Cited in Bassett, 1974).

14. New Jersey Client Satisfaction Scale. Used for followups, this questionnaire is composed of 13 items to measure client satisfaction with VR services, public assistance status, job history, and present occupational status. There is no premeasure to allow for assessment of client change. (Cited in Bassett, 1974).

Sources: Backer, 1977, pp. 27-29; Weisinger, 1975, pp. 60-61.

(Original sources given in parentheses)

words, success in rehabilitation is viewed not as a dichotomous variable of employed/not employed, but as a continuum of client gain, along which can be measured the degree of success of the rehabilitation process.

Second, weighted closure systems acknowledge, and in fact emphasize, that the continuum of client gain is multidimensional in scope, and therefore should be measured using multiple outcome criteria. As previously stated, the rehabilitation process is now envisioned as including improvement not only in vocational activities, but also in vocational potential, economic independence, physical functioning, and psychosocial characteristics. Bassett (1974) argues that while the 26 Closure Status is not a comprehensive index of client success, the weighted closure systems should not be used as a substitute for this or as the sole criterion for program evaluation. Instead, weighted closures and the 26 Closure system should both be used, as they are compatible with each other and are both potentially useful measures for program evaluation.

The third important concept in weighted closure measures is that of the weighting, a system whereby outcome measurement can be made more equitable and fair, and more reflective of the true state of affairs among the rehabilitation clientele. With this method, each closure is assigned a numerical value, or weight, according to the difficulty of the case. In this way, counselors are not penalized for spending extra time with hard-to-rehabilitate clients, and their efforts are formally noted.

Conley (1973) has suggested four factors which should be taken into account (to varying degrees) in the determination of a weighting scheme:

1. The probability of success in rehabilitation
2. The time expended by counselors on clients
3. A resource use factor
4. The client's improvement in social well-being

While this scheme gives recognition to certain factors which have previously been ignored, it unfortunately leaves the question of how to define "success in rehabilitation" unanswered.

Although a variety of weighting systems now exist in the U.S., none of them measure all the factors which could potentially influence the course of rehabilitation. Most of the indices include considerations of nonvocational issues. Some systems however, are based quite closely on the traditional emphasis of vocational goals in rehabilitation. While the majority of indices appear to be atheoretical in orientation, at least one (the Human Service Systems Scale) reflects the philosophy that a rehabilitation outcome measurement system should have an underlying theoretical basis and should not be borrowed from another field, but should be developed specifically for the purposes of rehabilitation programs.

Whatever system is used, outcome measures should be administered to clients at the start of the rehabilitation program, at closure, and again during a follow-up period, to allow for comparison of client change across three points in time. Westerheide, Lenhart, and Miller (1975) have recommended the following set of criteria which they feel a measure of case difficulty and client change should meet in order to be administratively practical for use in rehabilitation facilities:

1. Change should be measured for all clients regardless of closure status
2. The measure should require no changes in the service delivery system
3. The measure should not require sophisticated electronic data processing equipment
4. The measure should be easily interpreted

5. The measure should not require extensive inservice training
6. The measure should not require more than ten minutes of the counselor's time per case
7. The measure should yield reliable information when used across agencies, programs, and counselors
8. The content of the measure should reflect the real world concerns and goals of vocational rehabilitation

Table 9 gives some of the weighted closure and case difficulty indices which are being developed or are already in experimental use. References to these and to other measures can be found in a variety of sources, including: Backer (1977); Bassett (1974); Bennett & Weisinger (1974); Berkowitz (1972); Conley (1973); Walls & Tseng (1976); Weisinger (1975); Westerheide & Lenhart (1974); Westerheide, Lenhart, & Miller (1974); Worrall (1975); as well as in the original sources given in parentheses in Table 9. The annotations represent comments taken from a number of different writers, as compiled by Backer (1977) and Weisinger (1975).

As Weisinger (1975) and the Bassett group (1974) have stated, the perfect weighting system does not yet exist. Each of the ones listed in Table 9 contain various conceptual and methodological problems which still need to be worked out. To date, there have been numerous difficulties in the experimental applications of the indices, and none have yet been subjected to a nation-wide test of validity, reliability, and cost-effectiveness. Backer (1977, p. 30) notes that "Many have fallen short of the desired improvements in outcome measurement predicted by their inventors, often resulting in findings no more precise or helpful than what was available previously through use of the old-fashioned Status 26 system." In fact, in 1974, when the Study Group on Measurement of Outcomes met as part of the First Institute on Rehabilitation Issues (Bassett, 1974), they concluded that at that point

Table 9

Annotated List of Weighted Closure and Case Difficulty

Rehabilitation Outcome Measures

1. Rehabilitation Difficulty Score. An experimental, simplified weighting system intended as a screening device to single out the more difficult cases, this measure uses available data related to outcome with disadvantaged clients. Its utility as a closure device has yet to be demonstrated. (Kunce et al., 1969).

2. Weighted Closures. The purpose of this approach is to develop relative weights for significant client variables. Validity and reliability are not well established because data from clients' records have often been missing for the cases processed. (Berkowitz, 1972).

3. Case Difficulty Index. Sermon's Case Difficulty Index is based on data about what percentage of cases in different disability classifications do not get rehabilitated, statistically converted into a difficulty factor for each individual case closure. The advantage of this index is that it is simple and adjustable to changing conditions. (Sermon, 1972).

4. Florida Difficulty Index. This index has four basic elements: amount of time client was in rehabilitation service process; average case service cost; average number of case services provided; and Sermon's Composite Case Difficulty Index. These factors for a given client are compared against annual averages and composite difficulty score computed. The scale has been found to agree closely with counselor estimates of case difficulty. (Florida Division of Vocational Rehabilitation, 1973).

5. Oklahoma System Service Outcome Measurement Form. Five areas of client functioning are considered: physical, educational, economic, vocational, and psychosocial. Case difficulty is computed by relating eight demographic variables to successful closure. (Cited in Bassett, 1974).

6. Human Service Systems Scale. This device attempts to measure the degree of change experienced by clients served through various human service agencies. It purports to measure five areas of human needs described by Maslow in his hierarchy of needs: physiological, safety and security, love and belongingness, self-esteem, and self-actualization. The scale uses information of self, activities, concerns, health, and job. (Reagles & Butler, 1976).

7. Virginia Rehabilitation Gain Schedule. This instrument purports to measure work status, economic dependency, and psychological well-being of clients who have received VR services, with 18 objective, multiple-choice questions, including vocational items and a self-perception

Table 9 (Con't.)

measure. The orientation is to the disadvantaged disabled client, and the scale may have only limited application to the severely disabled and/or middle-class client. (Cited in Bassett, 1974).

8. Goal Attainment Scaling. This technique is applicable to a wide variety of human service activities. It is a procedure for identifying behaviorally defined goals and outcomes for clients on a simple scale ranging from most unfavorable outcome to best-anticipated outcome. Each problem or goal area is identified by the counselor, often with input from the client, and weighted as to importance in the overall counseling process. Simple mathematical procedures are provided for weighting and for computing total outcome score. (Program Evaluation Resource Center, Minneapolis).

9. Miller and Barillas' Weighting System. This approach weights closure on the basis of success ratios established for age, education, disability class, and type of previous service, based on the assumption that because clients vary in their problem complexity, they also vary in the proportions that achieve successful rehabilitation. The utility of this approach is presently in doubt. (Miller & Barillas, 1967).

10. Service Outcome Measurement Form. This is a 16-scale measuring device for computing rehabilitation outcome in social, physical, emotional, and vocational terms, and to determine the relative difficulty of various cases. (Westerheide, Lenhart, & Miller, 1974).

11. Actuarial System for Weighting Case Closures. Noble's approach uses the Federal minimum wage as the standard against which to judge achievements by the VR program. The national experience of the VR program in facilitating employment for disabled clients is the actuarial basis for estimating the probabilities of success and failure. (Noble, 1973).

12. Difficulty Index. This device relies on the counselor's estimated difficulty of rehabilitating persons with various disabilities in terms of time and effort. Paired comparison and semantic differentials techniques are used, but all judgements are made in reference to standard closure criteria. (Silver, 1969).

13. Vocational Adequacy at Closure Measure. This measure involves differential weights for: work status at closure; DOT job code at closure; weekly earnings at closure; and closure code. A related scale, Vocational Adequacy at Follow-Up, involves: employment at followup; work status improvement from closure; job satisfaction; and counselor estimate of success. (Eber, 1966).

14. Pattern-Probability Approach. This approach involves computing a probability index of expected case difficulty based on predictions from biographical variables. The probability index can be used to weight case closure, i.e., to give extra credit to counselors for success with cases the statistics say are especially challenging. (Bonge, 1975).

in time they could not endorse any of the outcome measurements then in existence as replacements for the old case closure system.

In any regard, most of the new measures are complicated to use, and thus do not meet the criteria of efficiency and minimum disruption of the service delivery system. Also, each of the indices has been created with a particular institution or program in mind, so transferability of measures across locations is often a problem. The New York-based research project to be discussed in the following section is attempting to deal with this difficulty. At present, however, the only option an evaluator has, other than to develop his or her own outcome measurement system, is to select from among the existing indices the one best suited to the purposes of the evaluation and which will most accurately measure the program goals.

Selected American and Canadian Rehabilitation Research Projects

There is a pressing need to standardize measures of rehabilitation outcome across state and national boundaries. With so many different systems now in use, the field of outcome measurements is currently in a state of chaos. As Trieschmann (1978, pp. 170-171) has argued, "We need both a standard language to document outcomes and a standard method of measuring these outcomes. If these systems were used nationally, we would have a means of comparing the results of various studies, which is currently impossible."

A group of researchers from the Institute for Rehabilitation Medicine in New York City are attempting to rectify this situation through the development of a set of instruments called Rehabilitation Indicators (RI's) (Brown, Caplan, & Swirsky, 1978; Diller, Fordyce, Jacobs, & Brown, 1978). The RI Project, which received its initial funding from the U.S. Rehabilitation Services Administration in 1974, emanated from the observed need for better delineation of the benefits of the rehabilitation effort. The investigators felt that outcomes should be described in general terms for a broad range of rehabilitation results, not just for the vocational ones.

The goal of the RI Project has been to develop a set of multidimensional descriptors (indicators) to delineate all of the various vocational, psychosocial, medical, recreational, and other broad-spectrum outcomes produced within rehabilitation programs. The intention has been to keep the Rehabilitation Indicators sufficiently general in nature that they can be used by any rehabilitation facility, for a multitude of different research as well as service-provision purposes. In this way, a much-needed common language of rehabilitation outcomes will evolve among researchers, physicians, and

other rehabilitation professionals.

Another purpose of the Rehabilitation Indicators is to eliminate the problem many of the other outcome measures have with the disparity between subjective verbal responses to indices and actual behaviour. The RI tool focuses on observable client conditions or behaviours which can be objectively described and measured. The underlying philosophy is that producing change in a client's behaviour is a major rationale of rehabilitation, thus observable behaviour change should be the measure of a successful program. This also avoids the methodological pitfalls of client self-report instruments and of rater judgments of attitudes, motivations, feelings, etc.

Rehabilitation Indicators are phrases used to describe: a) what a client actually does in day-to-day living; b) what the client is capable of doing; and c) what in the environment affects the client's behaviour or performance. The Indicators consist of two sets of behavioural descriptors of a client (Status Indicators and Activity Pattern Indicators), one set of skill descriptors of a client (Skill Indicators), and one set of descriptors of environmental influences on a client's activities (Environmental Indicators).

One of the major advantages of the Rehabilitation Indicators is that they use a jargon-free language of outcome measurement, which should greatly simplify any program evaluation use to which they may be put. Another advantage is that the Indicators are basically neutral instruments. It is up to the users of the RI's to provide value judgments about a client's level of or change in behaviour and activities. These users may include researchers, service-providers, and/or the rehabilitation clients themselves.

Rehabilitation Indicators appear to be a promising multidimensional tool for describing relevant outcome characteristics of a rehabilitation

client. Because they can be used to monitor and record changes over the duration of a rehabilitation program, they possess great potential for use in program evaluation studies. Through the comparison of descriptions of actual behaviour and goals, marked on the same broad-based and standardized indicator within every facility, the outcomes of rehabilitation can be delineated and reported using a single, comprehensive nation-wide system, as Trieschmann (1978) has advocated.

While it is too early to assess the strengths or weaknesses of the Rehabilitation Indicators as an outcome measurement scheme, a thorough and detailed approach has been used in their development to date. They encompass nonvocational aspects such as social and independent living skills as well as vocational areas, and many of the Indicators have already been put through extensive field testing in various types of rehabilitation agencies and facilities. The Project represents a large-scale and long-term research endeavor, and as such has more potential of evolving into a demonstrably reliable and valid rehabilitation outcome measurement instrument than most of the indices listed in Table 9 (pp. 37-38).

Another facility which has been extremely active in working towards better definitions and measures of client outcome in rehabilitation has been the University of Michigan Rehabilitation Research Institute (UM-RRI). The UM-RRI was one of the institutes established with funding from the Rehabilitation Services Administration as a result of the Rehabilitation Act of 1973 mandate for the evaluation of the State VR agencies. The stated objectives of the UM-RRI relate to conducting research on existing program evaluation instruments and developing alternative instruments and conceptual models for comprehensive program evaluation in the State-Federal rehabilitation program (Crystal, 1980).

The Institute has produced two monographs (Crystal, 1978; Miller, Lee, Wargel, & Won, 1977) on program evaluation needs and approaches in the State VR agencies. A survey identified 20 potential areas of focus for program evaluation work, including the design of a method to isolate the appropriate dimensions of outcome by measuring rehabilitation client closures, and the study of current case review measures for the purpose of developing a universal instrument. In a Handbook of Program Evaluation Studies (Miller & Wargel, 1978) which was compiled to provide information on evaluation efforts currently underway or completed, it was observed that most of the State agencies seemed to have devised their own particular evaluation methods and procedures independently of each other.

The UM-RRI research group has documented the fact that rehabilitation program evaluation efforts are fragmented, scattered, and disorganized. Crystal (1978) comments that although the nine Federal evaluation Standards have been established, an underlying conceptual framework is still needed for carrying out comprehensive program evaluation. As Hawryluk (1974) has noted, although the case status system delineates the types of services to be provided within each status, it does not clearly indicate, except for employment, the intended client outcomes.

Staff at the Michigan Institute, in addition to reviewing current methods of program evaluation, are also involved in generating new evaluation techniques. One of the items being developed is a "competency-based client outcome evaluation model" (Harrison, 1980), a proposed system where the assessment of client competencies following rehabilitation will form the basis for evaluation of a program. The measurement of so-called "intermediate client outcomes" such as competency in physical care, social skills, emotional and psychological stability, recreation and leisure, and independent

living will be emphasized, rather than just vocational competencies. This will permit counselors to credit other rehabilitation gains made by clients in addition to or instead of the single criterion of employment status.

The usefulness of the nine RSA evaluation Standards rests in the compiling and interpreting of the data generated by the required reports which are now submitted each year. The UM-RRI, under contract to the RSA, has recently completed an in-depth analysis of the 1977 fiscal year's Federal Standards data (Crystal, 1980). The intention of the analysis is to enhance VR agency performance and advance the state of rehabilitation program evaluation. If the Michigan document encourages utilization of the material it contains, and of the Federal Standards report data, it will have provided a major contribution to the information feedback system within the American rehabilitation services network.

Numerous attempts were made to locate rehabilitation program evaluations or client outcome studies which had been conducted in Canada. This proved to be a difficult task, and even the results of an extensive literature search yielded virtually nothing. It is of course possible that program evaluation studies are in fact being undertaken at various Canadian rehabilitation facilities and are merely not being published in the journals. Even this could not be ascertained, however, as there is no national information collection agency which keeps records of Canadian rehabilitation research. Within Ontario, three rehabilitation facilities were located which have engaged in some form of program evaluation. The efforts of these three institutes, all of which have published or are planning to publish research reports, are described below.

Kingston General Hospital has a university and hospital-based prevocational rehabilitation program for unemployed persons with severe handicaps, which is offered through the Regional Rehabilitation Centre at the Hospital. The function of the program is, through supervised practical work experience, to assist clients to develop physical tolerance and to improve their self-concept and work habits. The ultimate goal of the program, as in its American counterparts, is the development of good work habits and the achievement of financial independence through gainful employment.

The Kingston Prevocational Program has produced an in-house report (Symington & Lewis, undated), as well as a published article (Symington & Lewis, 1973), giving details of a cost-benefit analysis of its first year of operation in 1968-69. The analysis is based on the assumption that without having participated in the program, all clients who were seen during the one-year period would have remained unemployed and dependent. Thus client outcome is measured in terms of the traditional employed/unemployed dichotomy, with additional details included concerning salary. The two economic benefits which are calculated are: 1) the net savings to the government, and 2) the increase in earnings of the clients involved.

In order to conduct a cost-benefit analysis, one must be able to place a dollar value on services offered and on costs which would be incurred in the absence of such services. The underlying model which is used in the Kingston analysis involves a comparison of the annual earnings of the clients pre- and post-prevocational program, and the pre- and post-cost to the government in welfare and pension payments and in income tax payable by the individuals. In addition, the actual cost of running the program has been calculated by summing the costs of vocational and psychological testing, supervision of clients at work, schooling and training, maintenance allow-

ance provided, and other miscellaneous services and equipment.

Although in Canada there is no Status 26 closure system, the Kingston evaluation, like so many of the U.S. studies, does not deal with the many other rehabilitation gains which may accrue to the client in addition to employment and the receipt of a paycheque. Also, a major methodological flaw exists in the program evaluation design, which Bolton (1979) has pointed out with regard to many of the American evaluations. It is misleading to compare client employment status before program participation with employment status after program participation when the client's employment status is used as a criterion for selection into the program. "When clients are selected on the criterion of umemployment and the program is evaluated on the criterion of client employment, the program will appear to result in client improvement, of for no other reason than that the clients have nowhere to go but up." (Bolton, 1979, p. 214).

Chedoke Hospitals in Hamilton initiated a Day Care Rehabilitation Program approximately six years ago to provide outpatient maintenance therapy and a variety of activities for chronically mentally and/or physically disabled non-geriatric adults who, at the completion of a prevocational program, have been judged to be unemployable. The stated objectives of the program are to bring about and maintain maximal physical, social, and emotional functioning in the clients, and thereby to prevent or minimize functional deterioration and reduce subsequent requirements for acute health-care and social-agency support (Van der Spuy, 1979).

In a three-year study funded by the Ontario Ministry of Health, a team of investigators sought to examine changes in patients' physical, social, and emotional functioning which occurred as a result of participation in

the program. Ratings of clients' levels of functioning in the three areas were used, as well as a Patient Satisfaction Questionnaire which was devised for the purposes of the investigation. In addition, a Health Status Index was developed at Chedoke, with the various states of physical, social, and emotional functioning assigned a value reflecting their importance or desirability. The intention of the Index was to provide a convenient summary of patient health by attempting to quantify and standardize multidimensional states of health on a unidimensional scale. Bolton's (1974, 1979) previously quoted caution about the averaging together of independent measures comes to mind with regard to this Health Status Index.

The Chedoke program evaluation is atypical of most rehabilitation research because of its emphasis on measuring client outcome in the spheres of physical, social, and emotional functioning. In fact the program itself is atypical of most rehabilitation efforts, either in the United States or Canada, in that it does not deal with vocational rehabilitation at all. Thus the reason for the absence of the usual vocational measures in the evaluation is due to the selection procedures of the program; i.e., only those individuals who are deemed unemployable participate, so there is no question of assessing vocational improvement. The Chedoke Day Care Program exemplifies the broadening of the concept of rehabilitation advocated by the many professionals who have been dissatisfied with the typical predominantly vocational orientation.

The third Ontario rehabilitation institute which is known to have engaged in program evaluation is the Ontario Crippled Children's Centre in Toronto. This facility, which opened in 1962, is an active regional rehabilitation centre serving physically disabled children and young adults within the province on an inpatient and outpatient basis. In 1978-79 the

National Health Research and Development Program of Health and Welfare Canada funded a seven-month program evaluation feasibility study (for which the present author served as a research consultant) of a Prevocational Assessment Program at the Centre (Blidner, Boschen, & Staub, 1979).

The Program involves a three-day multi-disciplinary assessment of adolescents by a team of medical, educational, and other rehabilitation professionals. Following the comprehensive assessment of abilities, aptitudes, and interests, recommendations regarding the adolescent's future life planning are generated at a team conference. These recommendations are then presented to the client and his or her parents, and further counseling or follow-up services are provided if needed.

Although the program is called prevocational, the term refers to the fact that the clients have not yet become involved in vocational activities, due to their age. The service recognizes that the need for academic, vocational, and community living counseling and planning for handicapped adolescents may be even more pressing than the need for career counseling for able-bodied youngsters, due to the multiple obstacles encountered through being disabled.

The Ontario Crippled Children's Centre Prevocational Assessment Program provides another example of a rehabilitation service which has expanded the traditional meaning of the word "rehabilitation" to encompass much more than vocational rehabilitation. However, along with this expansion comes the difficulty of attempting to measure or assess the effectiveness of a program whose goals do not relate to the placing of the client in employment.

One of the major difficulties encountered in the program evaluation feasibility study at the Centre was the identification of appropriate client outcome measures for a service whose goal is to assist adolescents in future

life planning. Even when outcome indices are chosen, the problems of actually measuring the constructs selected to define client outcome for programs such as this are often formidable. As Bolton (1979, p. 228) has aptly commented, "Newer and more sophisticated goals require more advanced measurement and program evaluation technology."

The Ontario Crippled Children's Centre feasibility study resulted in the conclusion that it was not possible at the time to carry out a methodologically sound program evaluation of the Prevocational Assessment Program. This conclusion was arrived at because: 1) the program goals as stated could not be translated into operational terms; 2) no standardized procedures for collecting follow-up information existed as part of an overall data management system; and 3) appropriate client outcome measures and a method for their measurement could not be determined for this program.

Though not an evaluation study, the Ontario Ministry of Community and Social Services has produced a survey of all their provincially-subsidized rehabilitation workshops in Ontario (1978 Workshop Survey, 1979). The purpose of this document is to provide baseline data for the future assessment of the workshops. Thus the survey was designed "not as an evaluation, but rather as a first step in the development of a comprehensive program monitoring and evaluation system for the workshop program."

One of the survey items included a question asking workshop managers to indicate the importance of a number of criteria for judging the effectiveness of their program. It is noteworthy that among the 38 managers in rehabilitation workshops for the physically disabled, every one of them felt that client satisfaction was an important criterion for judging program effectiveness. None of the other criteria which were suggested received

as high a response, indicating the overriding emphasis which would be placed on this client outcome measure, at least by the managers, in an assessment of the program's effectiveness. Hopefully the preliminary work which has been undertaken through this rehabilitation workshop survey will now be followed up by the Ministry of Community and Social Services with an actual workshop program evaluation study.

Conclusion

It is difficult to draw a general conclusion from the foregoing material, other than to say that much work remains to be done in the field of rehabilitation client outcome measures. This is particularly true in Canada, where the issue has barely been addressed, much less researched or resolved. The United States, on the other hand, has been very actively involved in recent years in the search for a comprehensive outcome measurement system.

Nevertheless, even with the tremendous amounts of energy and resources being poured into the task by the Americans, an adequate rehabilitation outcome measure remains frustratingly elusive. In spite of the numerous weighted closures and other schemes which have been suggested, no one system has yet been developed which has been promising enough to be recommended for national implementation within the U.S. Although many of the measures have good potential, they have all been judged to be deficient in major ways.

Perhaps this is true in part because the orientation or the philosophy of rehabilitation is still deficient as well. It is difficult to shake the long-standing attitude that rehabilitation means vocational rehabilitation, particularly when present legislation reinforces the traditional concepts. Thus, even if new outcome indices are implemented, it is unlikely they will have any substantial impact unless corresponding modifications are made in the relevant government rehabilitation laws. As one rehabilitation counselor has wished out loud, "One day, perhaps, Vocational Rehabilitation may be a division of a Department of Rehabilitation." (Backer, 1977, p. 13).

It has come to be accepted in most circles now that the process of rehabilitation encompasses much more than simply vocational rehabilitation, and therefore must be measured through the use of multidimensional rather

than unidimensional instruments. However, if the ultimate goal of rehabilitation treatment is, as Bolton (1974, p. 123) has suggested, "successful life adjustment", it is not surprising that researchers have encountered so much difficulty in their attempts to assess this broadly conceptualized goal Perhaps the rehabilitation profession has gone from one extreme to the other in the comprehensiveness of their definition of rehabilitation and in the scope of the outcomes they are attempting to measure.

The optimal approach would appear to be to focus future rehabilitation program evaluation efforts on what Harrison (1980) and others have called the "intermediate client outcomes" relating to competencies in psychosocial, educational, vocational, recreational, and independent living skills. In this way the outcome measures will be broad enough to reflect today's comprehensive view of rehabilitation, and narrow enough to allow for methodologically sound assessment of client change and program effectiveness.

Regardless of the approach taken, however, it will be necessary to allocate sufficient levels of funding to support long-range, large-scale projects such as the one currently underway in New York on the Rehabilitation Indicators. Only through a strong and continuous commitment to research can a nation-wide system of rehabilitation client outcome measurement be developed.

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